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ABSTRACT

The United States Census Bureau's mission is to be the preeminent collector and provider of timely, relevant, and quality data about the nation's people and economy. The Census 2000 teaching guide (grades 5-8) aims to help teachers bring the census to life for students. The guide outlines skills that correlate with national standards; fulfills curriculum requirements; demonstrates the importance and the many benefits of the census; and shows how to navigate the U.S. Census Bureau Web site. A model census helps students learn to display information on charts and graphs, use special purpose maps, and analyze census data. The grades 5-8 guide is divided into the following sections: Map Literacy (History/Geography); Lesson 1: A History of the Census (Analyzing Historical Maps); Lesson 2: Where We Live (Understanding Special Purpose Maps); Community Involvement (Civics and Government/Art/Language Arts/Geography); Lesson 3: Fill in Your Future (Thinking Creatively); Lesson 4: Making Plans (Real-Life Problem Solving/Analyzing Data); Managing Data (Math/Civics and Government/Geography); Lesson 5: Create Your Own Form (Thinking Creatively/Collecting and Analyzing Data); Lesson 6: Graph It! (Creating Percents and Circle Graphs/Analyzing and Organizing Data); and Additional Resources. (BT)

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grades 5•8

Making Sense of Census 2000

THIS TEACHING GUIDE

will help you to:

- bring the census to life for your students
- teach skills that correlate with national standards
- fulfill curriculum requirements
- demonstrate the importance and many benefits of the census
- navigate the U.S. Census Bureau Web site

SO 031 045

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Scope and Sequence

LESSON	OBJECTIVE	CURRICULUM CONNECTIONS	SKILLS	STANDARDS*
STRAND 1: MAP LITERACY				
1. A History of the Census ★	Students will compare historical maps and draw conclusions.	• History • Geography	• Analyzing Historical Maps	• Time, Continuity, and Change • People, Places, and Environment • Human Systems
2. Where We Live ★★	Students will use special purpose maps to analyze population densities and shifts.	• History • Geography	• Understanding Special Purpose Maps	• Time, Continuity, and Change • Patterns and Relationships • People, Places, and Environment • The World in Spatial Terms • Human Systems
STRAND 2: COMMUNITY INVOLVEMENT				
3. Fill in Your Future ★	Students will explore the theme of Census 2000 by designing a billboard.	• Civics and Government • Art • Language Arts	• Thinking Creatively	• Civic Ideals and Practices • Power, Authority, and Governance
4. Making Plans ★★	Students will use real-life problem-solving skills to select a site for a new school.	• Civics and Government • Geography	• Real-Life Problem Solving • Analyzing Data	• Individuals, Groups, and Institutions • Production, Distribution, and Consumption • People, Places, and Environment • The Uses of Geography
STRAND 3: MANAGING DATA				
5. Create Your Own Form ★	Students will create their own "mock" census form, then analyze data they gather from it.	• Math • Civics and Government • Geography	• Thinking Creatively • Collecting Data • Analyzing Data	• Civic Ideals and Practices • Statistics • Mathematics as Communication
6. Graph It! ★★	Students will evaluate and display data they gathered from their own "mock" census form.	• Math • Civics and Government • Geography	• Creating Percents and Circle Graphs • Analyzing Data • Organizing Data	• Statistics • Mathematics as Communication

★ For Grades 5-6 ★★ For Grades 7-8

*NCSS Social Studies Standards, NCTM Math Standards, and The Geography Education Standards Project Geography Standards.

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Managing Data

Math/Civics and Government/Geography

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Additional Resources . . . . . **Inside Back Cover**

These lessons have been stepped to help you teach and apply this material to the appropriate grade level for your class.

★ For Grades 5-6 ★★ For Grades 7-8

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How to Use **This Guide**

The lessons in this guide introduce students to Census 2000 with high-interest, grade-level appropriate activities designed to meet your curricular needs. Students will learn what a census is and why it's important to them, their families, and the community.

Lesson planning at a glance Your Scope and Sequence (on the inside front cover) provides an at-a-glance summary of the lessons in this book. These lessons are designed to support your classroom goals, and are divided into three learning strands: *Map Literacy, Community Involvement*, and *Managing Data*. The Scope and Sequence identifies skills, objectives, national standards, and curriculum areas for each lesson. Map, computer, and library icons allow you to quickly see which lessons interface with the We Count! wall map, and those that offer special enhancements using Internet and library resources.

SYMBOL KEY

We Count! Wall Map

Internet

Library

For Grades 5-6

For Grades 7-8

Customized for your classroom Each lesson in this guide consists of a teacher lesson plan and two reproducible activity pages. Because students in grades 5-8 have attained different degrees of mastery, the lessons in each strand have been stepped (one lesson aimed at grades 5-6; one lesson aimed at grades 7-8), allowing you to tailor your teaching to the individual needs of your students.

Before you begin This teaching guide is based on a unifying concept: ***The census makes a difference for our community.*** Before you begin using the lessons, write this concept on the board. Explain that information gathered by the census helps America learn what America needs.

Extension Activities Many lesson plan pages contain one or more Extension Activities designed to enhance students' experience and understanding of the census beyond the classroom. These activities often make use of the vast stores of information available at the official U.S. Census Bureau Web site (see below) and will make it possible to incorporate updated Census 2000 information into lessons.

Using the Web site The U.S. Census Bureau Web site (**www.census.gov**) is easy to use and can provide students and teachers with a wide variety of information on characteristics of the U.S. population. For example: Starting on the home page, click on "Estimates" under the box labeled "People." In this category, choose "States." Students can work with the data found on screen or the data can be printed out for easier use. **In addition, teachers can access the lessons from all three Census 2000 Teaching Guides (K-4, 5-8, and 9-12) on the Census Bureau Web site. The Census 2000 questionnaire may also be viewed on this site.**

Map Literacy

A HISTORY OF **THE CENSUS**

★ Grades 5-6

Skills and Objectives:

- Students will compare historical maps.
- Students will draw conclusions from maps.

Suggested Groupings:
Small groups, individuals

Getting Started:

- Hand out copies of the reproducible on page 4. Have students read and compare the 1790 and 1890 census maps with each other, and with the We Count! wall map.

- Explain that the first U.S. census, in 1790, yielded a population count of approximately 4 million; but by 1890, that number had grown to approximately 63 million; and by 1990, that number had reached approximately 248 million. Contributing factors include high levels of immigration, high birth rates, and longer life spans.

- **What do you know about the United States in the 1790s?** *(Possible answers: it had many fewer states; the Revolutionary War had just ended; slavery still existed.)* **In the 1890s?** *(The Spanish-American War took place; slavery had been abolished.)* **In the 1990s?** *(The Cold War ended; the U.S. fought the Gulf War; many new technologies, including the Internet, were developed.)*

Using the Activity Worksheet:
Distribute copies of the Lesson 1 Activity Worksheet (page 5) to your class and introduce them to the activity. Inform them that they will need to refer to the 1790 and 1890 census maps (page 4) and the We Count! wall map to complete this activity.

Wrapping Up:

- Review students' completed charts and their answers to the Worksheet questions (page 5).

- **How does the U.S. population in 1890 compare with the population in 1990 (on the We Count! wall map)?** *(Possible answer: California has grown to become the most populous state.)*

Chalkboard Definitions

census: an official count of all the people living in the country.

historical map: a map that provides information about the past.

- **Why might the government need to know about population changes?** *(Possible answers: to know how many representatives each state gets; to provide the right services to everyone.)*

- Explain that while the overall population may have increased between 1790 and 1890, the American Indian population declined. Have students connect the information on the American Indian Reservation map (on the We Count! wall map) with what they know about the history of American Indians. For instance, students can research changes among the American Indian population during those years. What are some of the factors that contributed to these changes?

- Students might enjoy finding out about censuses in other countries or cultures. For activities using *quipus*, knotted strings the Inca (an ancient South American people) used to record census-style data, see *Multicultural Math: Hands-on Activities from Around the World* by Claudia Zaslavsky (Scholastic, 1994).

Answers:
Page 5: 1. VT, NH, NY, MA, CT, RI, PA, NJ, DE, MD, VA, NC, SC, GA. 2. 100,000–349,999; 2,000,000 or more; 17,990,500. 3. Students should realize immigration played a large part in the U.S. population increase.

	1790	1890	1990
TOTAL U.S. POPULATION	3,909,214	62,979,766	248, 709, 873
NUMBER OF STATES included in census	13	45	50
AREAS INCLUDED IN CENSUS that had not yet become states (use abbreviations)	TN	UT, AZ, NM, AK	

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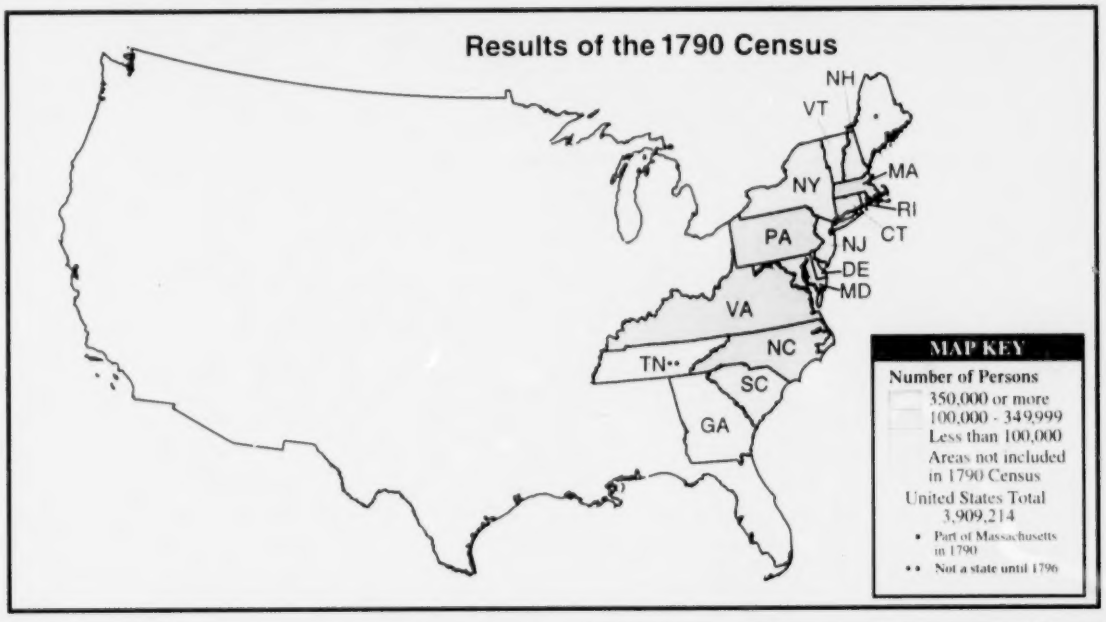
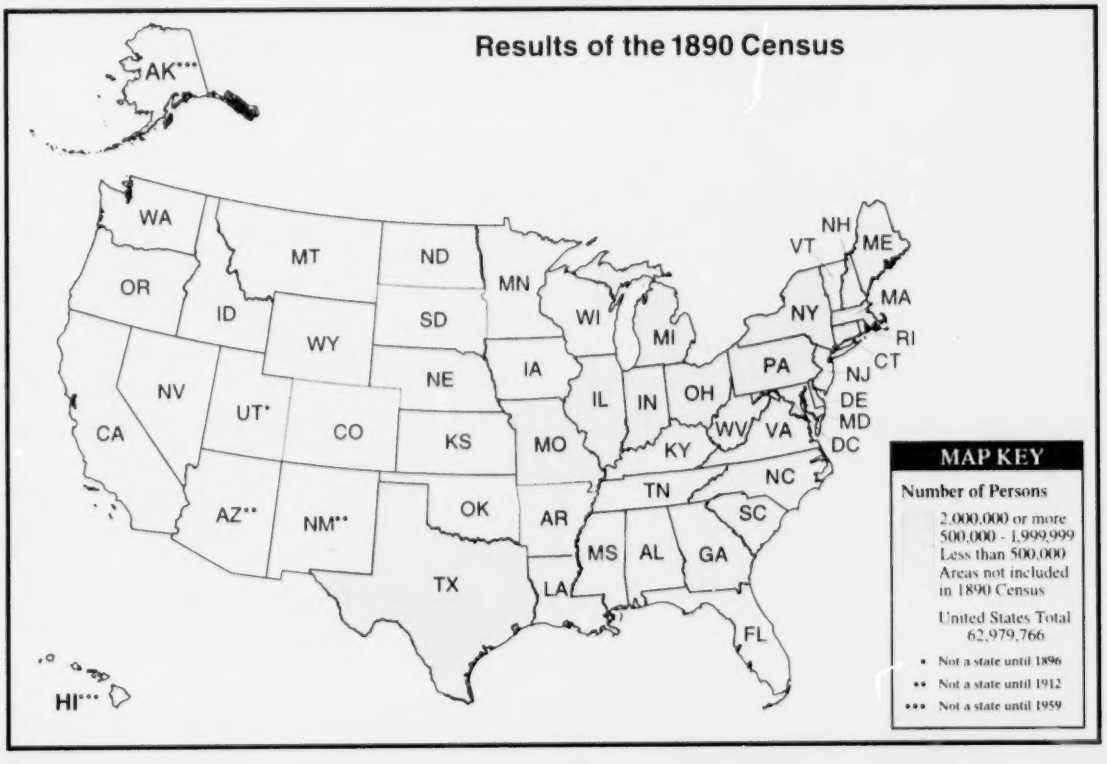
A History of the **Census**





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Name: _____

A History of the **Census** (continued)

Look at the two **historical maps** on the previous page and the We Count! wall map. The top map shows information taken from the 1790 Census. (That's the first year a census was taken.) The bottom map shows information from the 1890 Census. The We Count! wall map shows information from the 1990 Census. By comparing these three maps, you can get some ideas about how the United States changed during these 200 years. **Use the three maps to fill in the chart below.**

	1790	1890	1990
TOTAL U.S. POPULATION			
NUMBER OF STATES included in census			
AREAS INCLUDED IN CENSUS that had not yet become states (use abbreviations)			

Now use the maps to answer these questions:

1. List the states that appear on both the 1790 and 1890 maps.

2. How many people lived in New York in 1790?

In 1890? In 1990?

3. What might be some causes of the growth in U.S. population between 1790 and 1990?

WHERE **WE LIVE**

★★ Grades 7-8

Skills and Objectives:

- Students will practice reading special purpose maps.
- Students will analyze population density and population shifts.

Suggested Groupings:

Small groups, individuals

Getting Started:

1. Begin this lesson by telling students they will practice reading two kinds of special purpose maps: a Mean Center of Population map (on page 8 of this guide) and a Population Density map (inset in the We Count! wall map).

- A Mean Center of Population map is a useful tool in assessing population shifts. Reasons for these shifts include historical movements, such as westward expansion, as well as economic trends.

- The Population Density map shows where people in the U.S. live, county by county. Students can use the map key to determine how densely populated particular counties are.

2. To help students understand what the mean center of population is, try this demonstration:

- Tape 3 paper clips on each end of a letter-size envelope. Balance the envelope on your fingertip. Demonstrate the balance point to the class.

- Then move 2 paper clips from one side of the envelope to the other, so that one side has 5 clips and the other has one. Demonstrate how the balance point shifts.

- Explain that the mean center of population is the point at which the United States would balance perfectly if it were a flat surface (like the envelope) and every person weighed the same amount (as the paper clips do).

- Be sure students know which area of the U.S. the map on page 8 shows. Have them match the states on this map with the same states on the We Count! wall map.

Using the Activity Worksheets:

- Photocopy the Lesson 2 Activity Worksheets (pages 7 and 8) for your class. Distribute the worksheets to your students and introduce them to the activities they will do.

Wrapping Up:

- Go over students' answers to the questions on worksheet pages 7 and 8.

- According to the 1990 Census, the Sunbelt region (Southern and Southwestern states) had the largest population increase. Help students see that the center of population is shifting south and west in accordance with the population increase.

- Northeastern states have the highest population density. Help students see the correlation between this fact and how the region appears on the Population Density map.

- Have students refer to their school library's almanac or *The Statistical Abstract of the United States* to compare the population density of the U.S. to that of other countries. *(In 1990, the U.S. population density was 70 people per square mile. Australia had 6 people per square mile, and Japan had 849 per square mile.)* Next, have them compare the population densities of the U.S. states as well.

Answers:

Page 7:

1. 250 or more people per square mile. **2.** New Jersey and Rhode Island. (New Jersey is actually the most densely populated state.) **3.** Answers will vary. **4.** The Northeast. **5.** Possible answer: The Eastern half of the country is more densely populated than the Western half.

Page 8:

1. Maryland, Indiana, Missouri. **2.** 1830 to 1840. **3.** West and south. **4.** More people are moving to the South and West.

Chalkboard Definitions

special purpose map: a map that displays information about a specific subject.

mean center of population: the point at which a country would balance perfectly if it were a flat surface and every person on it was of equal weight.

population density: the number of people per unit area (e.g. square mile).

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Name: _____

Where **We Live**

A lot of the information the census collects is shown on **special purpose maps.** Special purpose maps are maps that show information about a specific subject, such as a country's annual rainfall or milk consumption. Two special purpose maps the U.S. Census Bureau uses are a **Population Density** map and a **Mean Center of Population** map.

Population Density Map

The We Count! wall map shows the population totals for each state. But, the Population Density map shows how that population is distributed in each state. Look at the Population Density map (in a separate box on the We Count! wall map.) This map shows the population density, or how many people there are per square mile for each county in the United States. Different densities are shown as different colors. The map key tells you what each color represents. Use this map to answer the following questions.

1. How many people per square mile do the red counties have?

2. Which two states appear to be the most densely populated?

3. Look at your state. What is the population density of the most densely populated part?

What is the population density of the least densely populated part?

4. Which region of the country seems most densely populated: the Northeast, the Midwest, the South, or the West?

5. What is one conclusion you can draw from this map?

Name: _____

Where **We Live** (continued)

Mean Center of Population

As the U.S. has grown from 13 to 50 states, the number of people living in different parts of the country has also changed. The **Mean Center of Population** map shows the point at which the country would balance perfectly if it were a flat surface and every person on it were of equal weight.

Mean Center of Population

Look at the Mean Center of Population map above. Use it to answer the questions below.

1. In what state was the center of population located in 1790? _____
   in 1890? _____ in 1990? _____

2. Which decade had a larger population shift: 1830 to 1840, or 1960 to 1970? _____

3. In which two directions has the center of population shifted since 1790?
   _____

4. What do you think this shift means? _____
   _____

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Community Involvement

FILL IN YOUR **FUTURE**

Grades 5-6

Skills and Objectives:

- Students will explore the theme of Census 2000.
- Students will elaborate on a Census 2000 slogan.

Suggested Groupings:

Small groups

Getting Started:

1. Introduce the lesson by telling students that they will use their creative thinking skills to discuss a Census 2000 slogan: **"This is Your Future. Don't Leave It Blank."** In addition, ask your students to design a billboard around the slogan.

- Ask students to think about what the census slogan means. Have students share their ideas with the class. Explain that this slogan emphasizes the need to fill out and return their census questionnaires so that the needs of individual communities and the nation, now and in the future, will be based on accurate information. Many federal, tribal, state, and local programs use census information to allocate funds and to determine the need for roads, schools, etc.

- Explain to students that the number of congresspersons representing their state in Washington is determined by state population totals gathered by the U.S. Census. If one state's population increases while another state's decreases, the first state could gain a representative in Congress while the second state could lose one. This reassignment of congressional seats based on changes in state population is called reapportionment. Voting districts can also be changed based on census data. The principle of "one person, one vote" requires that congressional and state districts have approximately equal population totals.

2. Touch upon media literacy with your students. Choose a few advertisements from magazines, and discuss with them what makes these advertisements appealing and successful.

Chalkboard Definitions

slogan: a brief, catchy phrase used in advertising.

congressional representative: an official elected to the House of Representatives.

data: factual information.

billboard: a large, outdoor sign used for advertising.

- What makes a good advertising slogan? Have students give some examples and explain their answers. *(Answers will vary. Students should understand that a good slogan gets to the point and is easy to remember.)*

- Where might you see billboards? *(Possible answers: on a highway; on a building or barn.)* **Why would a billboard be an effective way to advertise?** *(Possible answers: because it is large and eye-catching.)*

3. Students can visit the U.S Census Bureau Web site (www.census.gov) or the library for information they could use in writing copy for their billboards.

Using the Activity Worksheets:

- Distribute copies of the Lesson 3 Activity Worksheets (pages 10 and 11) to your class and introduce students to the lesson.

Wrapping Up:

- As a class, discuss students' billboard designs. Ask students how they chose their designs? What factors did they consider?

- **Where could you place your billboard? Where would the most people see it?** *(Answers will vary.)*

- **How could the census affect your future?** *(Possible answers: new schools, roads, or hospitals could be built; my school district might receive more funding for books and programs.)*

Extension Activity:

- Have older students select a specific target group and direct their billboard designs to that group. Then, have them present their designs to an adult group (PTA, school board, etc.) and display them throughout the community to encourage participation in the census.

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Name: _____

Fill in your **Future**

The U.S. Constitution says the government must do a census every ten years. Filling in the census form is important because it's like filling in the future. Consider these census facts:

- The census count determines how many Congressional representatives your state gets.
- Information from the census helps state and local governments decide where new roads, parks, schools, and other services are needed.
- Businesses use census data to help locate their factories and stores.

By law, all the information collected in the census is kept confidential.

To help people understand the importance of completing and returning their census forms, the U.S. Census Bureau has created a slogan for Census 2000: **"This is Your Future. Don't Leave It Blank."** Imagine you have been asked to advertise this slogan. How would you present this idea on a billboard?

1. Copywriting

As a group, discuss the Census 2000 slogan. Then in your own words, explain what you think the slogan means. How could you persuade people to fill out their census forms? What could you say?

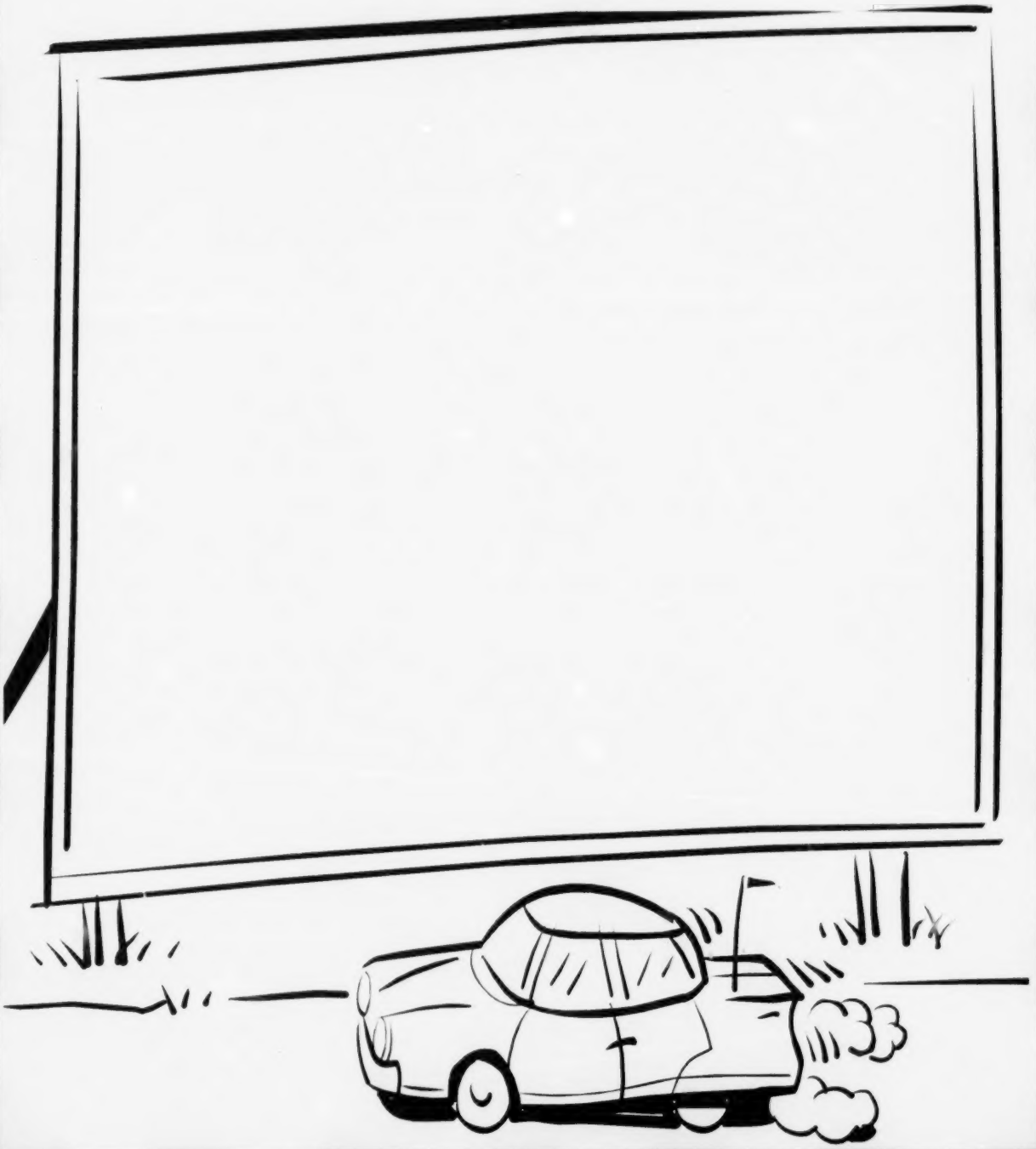
2. Designing

Work with your group and use your ideas to design a billboard featuring the Census 2000 slogan. What illustrations or symbols would help get the message across?

Name: _____

Fill in your **Future** (continued)

- Use the space below to sketch your billboard design.



MAKING **PLANS**

★★ Grades 7-8

Skills and Objectives:

- Students will use real-life problem-solving skills to choose a site for a new school.

Suggested Groupings:

Small groups, individuals

Getting Started:

1. Ask students how they think census information is used. Explain that federal, tribal, state, and local governments, and businesses use census information on age, gender, language, housing, employment, income, and transportation to tailor services to a community's needs. This information is an integral part of urban planning decisions. Census data are often organized by census tracts (see "Chalkboard Definitions" box).

Chalkboard Definitions

census tracts: small, relatively permanent subdivisions of counties that generally have 2,500 to 8,000 residents. Tract boundaries usually remain the same from census to census, allowing people to compare data from several censuses.

statistics: a collection of numerical data.

- Tell students they will do a site-planning exercise by using census-style data and other factors to pick a new school site. Ask: **What factors would you consider in selecting a site for a new school?**

2. You may wish to do the following as a warm-up activity:

- Write these categories on the chalkboard:
  1. Children aged 6-12
  2. Adults aged 65+
  3. Households without cars

- Ask students to name the category or categories that would most affect plans for the following:
  A. A new bus route *[2, 3]*
  B. A new middle school/jr. high school *[1]*
  C. A new community center *[1, 2, 3]*

How might a person from each of the age categories feel about each plan? For example: How would adults 65 and older feel about a new school being built near them?

3. Discuss with students how information about other characteristics (such as gender, language, employment) can help local governments serve their constituents. If necessary, give an example, such as using census information on languages spoken in the home as a guideline for hiring bilingual workers at social service agencies.

Using Activity Worksheets:

- Distribute copies of the Lesson 4 Activity Worksheets (pages 13 and 14) to the class and introduce students to the lesson.

- Invite students to come up with their own examples of how census information might be used. Students could look on the U.S. Census Bureau Web site (www.census.gov) or in the library for additional categories of census data.

Wrapping Up:

- Have groups compare the sites they chose for a new school. Most groups probably chose Site B based on what is nearby (convenient transportation, residential housing, a large school-age population) and what is not nearby (industrial areas, a highway, other existing schools).

- You might wish to stage a mock Town Meeting to discuss students' site selections. At this meeting, add a cost consideration to the selection process. Propose to students that it will cost twice as much to build a school on Site B, as it will to build on Site A or C. Building a school on Site B would mean raising taxes. Ask students to rethink their site selection with this in mind. **Would their decision remain the same? Why or why not?**

Extension Activity:

Have groups brainstorm for other planning decisions that could be made from the data in this lesson, for example: a new playground or children's hospital.

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Name: _____

Making **Plans**

One way that census data are gathered and organized is by **census tracts.** Census tracts are small areas within counties that generally have between 2,500 and 8,000 residents, averaging 4,000 per tract. Local governments can use tract **statistics** to make decisions, such as which areas could use a new bus route, or which neighborhoods need more playgrounds.

What if you were a local government official? How would you use census-style data to make plans? Give it a try. A local school district has to decide where to build a new middle school/junior high school. The planning chart below helps you analyze each site. Use the School Planning Map and the Census Table on page 14 to fill in the chart below and choose the best site for the new school. For each factor on the chart, rank the sites from 1 (best) to 3 (worst). Explain your reasoning for the ranks you choose. Then add up the rankings for each site to see which one comes out with the lowest total. That's your site!

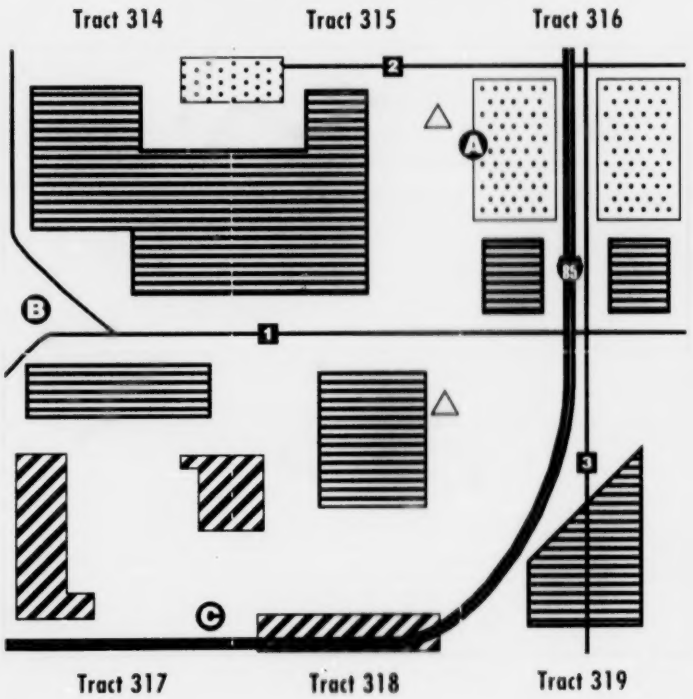
Planning Chart

FACTORS TO CONSIDER	SITE A	SITE B	SITE C	REASONING
School-Age Populations Schools should be located near areas where lots of kids live. Which sites are near tracts with large school-age populations?				
Existing Schools Should schools be close together, or spread out among areas with lots of children?				
Industrial Areas Factories can cause noise and air pollution. How might this affect a school?				
Transportation How will kids get to school? Are there roads leading to the site, or will the community have to build new ones? Is it dangerous to put a school near a large highway?				
Totals	____	____	____	

Name: _____

Making **Plans** (continued)

School Planning Map



Census Table

TRACT	CHILDREN AGES 6-12
314	1673
315	2170
316	863
317	1397
318	1169
319	942

MAP KEY

- △ Existing Middle School/Junior HS
- A B C Possible New School Sites
- Industrial
- Commercial
- Residential
- 85 Interstate Highway
- 1 County Road

- Which site did you choose? Explain why you picked this site.

Managing Data

CREATE YOUR **OWN FORM**

★ Grades 5-6

Skills and Objectives:

- Students will gather and organize data using a "mock" census form.
- Students will determine mean, mode, range, and median for sets of data.

Suggested Groupings:
Small groups

Materials:
Index cards or notebook paper

Getting Started:

1. Students may be familiar with finding the mean, range, and median; they may not understand the ways in which these statistics are used to describe a set of data. Mean, median, and mode are types of statistics known as *measures of central tendency.* Range is a *measure of data dispersion.* The Census Bureau uses such measures to describe some of the data it collects about the United States. Depending on what is being studied, different researchers may find one measure more useful than another. Median income, for example, may provide economists with a better picture of what a person "in the middle" earns than mean income, which can be distorted by large ranges and unequal distribution.

Chalkboard Definitions

mean: the average of a set of numbers.

median: the middle number (or the average of the two middle numbers) in a set of numbers.

mode: the number that appears most often in a set of numbers.

range: the difference between the greatest number and the least number in a set of numbers.

addend: any number that is added to another to form a sum.

2. The day before your class does this activity, explain to students that they will be conducting a class census. To do this, they will be collecting information from their own households.

- Your class census will include two questions.
  1. How many people live in your household?
  2. What are their ages?

- Have students write each question on an index card or a sheet of paper, leaving room for answers. Instruct students to take their "census form(s)" home, ask family members (including themselves) each question, and record the answers on the cards or paper.

Using the Activity Worksheets:

1. Make copies of the Lesson 5 Activity Worksheets (pages 16 and 17).

2. Divide your class into small groups (no more than 6). Give each group one copy of each worksheet and a pile of index cards.

- Groups will use their worksheets to develop their own household statistics.

Wrapping Up:

1. Compare group results to national figures (refer to the Census Facts box on page 16). Statistics will vary, but students should be able to explain their work.

- **Why might the mean household size for your group be higher than the national mean?** *(All student households include at least one child and one adult. The national mean includes many households made up of a single adult.)*

- Make sure students understand that there can be more than one mode if two or more numbers show up an equal number of times in a set.

- **Why might the median age for your group be lower than the national median?** *(Again, all student households include at least one child. The national median age includes a segment of the population that doesn't have children.)*

2. Photocopy the Selected Census 2000 Short Form Questions on page 21 and distribute them to your class, explaining to students that these are some examples of the actual census questions.

Extension Activity:

Have students visit the U.S. Census Bureau Web site (www.census.gov) to get updated statistics on mean household size and median age. How do those data compare with the class' statistics? Have students choose other questions they could ask, then collect data and compile statistics based upon the answers.

Name: _____

Create Your **Own Form**

The U.S. Census Bureau will use the data gathered in Census 2000 to develop statistics that tell us more about our country. Some of the statistics the U.S. Census Bureau might use are: **mean** (or average), **mode, range, and median**.

The Census Facts box (right) gives you two of these statistics. Read the Census Facts box. Then work with your group to develop your own census-style statistics. Follow the directions below.

CENSUS FACTS

- The **mean** (or average) number of people in a U.S. household was **2.63** in 1990.
- The **median** age of people in the United States in 1990 was **33**.

MEAN

The **mean** is the average of all the numbers in a set of numbers. Follow these steps to find the mean number of people in your group's households:

1. Write down the number of people in your household on a card. Have a group member collect the cards and list all the numbers.
2. Add all the numbers, then divide the sum by the number of addends. (In this case, the total number of households in your group.) If necessary, round your answer to the hundredths place. This number is the mean number of people per household for your group.
3. Write the mean here: _____
4. Compare this mean to the national mean listed above. Is the mean for your group higher or lower than the national mean from the 1990 Census? _____

MODE

The **mode** is the number that occurs most often in a group of numbers. There can be more than one mode. Find the mode of the ages of household members in your group. Here's how:

1. Write down the age of each person in your household on a separate index card.
2. Have a group member collect the cards and sort them by age. Make a stack for each age.
3. Which stack (or stacks) has the most index cards? That age (or ages) is your group mode.
4. Write the mode here: _____

Name: _____

Create Your **Own Form** (continued)

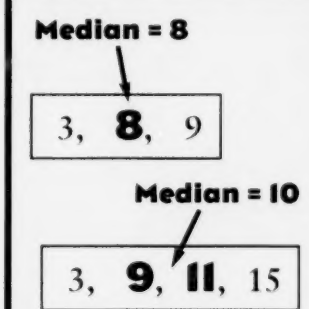
RANGE

Range is the difference between the greatest number and the least number in a set of numbers. Find the range of age for household members in your group. Here's how:

1. Take the age index cards you used for finding the mode, and order them from least to greatest.
2. What is the youngest age? _____
3. What is the oldest age? _____
4. Subtract answer 2 from answer 3. This is your range.
5. Write your range here. _____

MEDIAN

The **median** is the middle number in a set of numbers. If there is an even number of numbers, the median is the mean of the two middle numbers. To figure out the median age of people in your group's household, follow these steps:



1. Use the same index cards as above, still ordered from least to greatest.
2. Find the middle number or numbers. You might want to remove cards in pairs, one from each end, until only one number is left. If two numbers are left, find the mean of the two.
3. What is the median age of your group's household members? _____
4. Compare your group's median age to the national median age in the Census Facts box. Is yours higher or lower than the national median age? By how much?

_____

Compare the statistics your group gathered with those gathered by other groups.

Selected Census 2000 Short Form Questions

1. What is this person's sex?

❑ Male
❑ Female

2. What is this person's age and date of birth? (Print numbers in boxes)

☐☐ Age on April 1, 2000
☐☐ Month of Birth
☐☐ Day of Birth
☐☐☐☐ Year of Birth

Note: Please answer BOTH questions 3 and 4.

3. Is this person Spanish/Hispanic/Latino?

❑ No, not Spanish/Hispanic/Latino
❑ Yes, Mexican, Mexican American, Chicano
❑ Yes, Puerto Rican
❑ Yes, Cuban
❑ Yes, other Spanish/Hispanic/Latino — Print group below ↴

_____

4. What is this person's race? Mark one or more races to indicate what this person considers himself/herself to be.

❑ White
❑ Black, African American, or Negro
❑ American Indian or Alaska Native — Print name of enrolled or principal tribe below ↴

_____

❑ Asian Indian
❑ Chinese
❑ Filipino
❑ Japanese
❑ Korean
❑ Vietnamese
❑ Other Asian — Print race below ↴

_____

❑ Native Hawaiian
❑ Guamanian or Chamorro
❑ Samoan
❑ Other Pacific Islander — Print race below ↴

_____

❑ Some other race — Print race below ↴

_____

View the Census 2000 questionnaire on the U.S. Census Bureau Web site (www.census.gov).

GRAPH IT!

★★ Grades 7-8

Skills and Objectives:

- Students will practice calculating percentages.
- Students will determine measures of central angles.
- Students will display information in a circle graph.

Suggested Groupings:
Small- to medium-sized groups

Materials: Protractors, calculators (optional)

Getting Started:

1. Begin this lesson by providing students with some information about the U.S. Census. Did they know that the United States collects more varied and complete census information than any other country? The Census Bureau gathers information from households about population and housing, including questions about age, race, and education. Once census data are collected, statistics are used to compile this information in a more meaningful way so it can be shared with agencies, businesses, universities, and the public. Information such as age distribution of a population is crucial because it impacts government programs and spending. For example, if the percentage of U.S. citizens ages 65 and over increases between 1990 and 2000, this might affect the allocation of funds to social security and programs for the elderly.

2. Explain to students that they will be calculating percentages to complete a table and then use the table to create a graph. To prepare for the activity, ask students to write the ages of their household members on a piece of paper. If students completed Lesson 5, they will already have this information.

Using the Activity Worksheets:

1. Divide class into groups (no less than 6 students each) and distribute one copy of the Activity Worksheet on page 19 to each group. Introduce them to the activity and remind them that they will need the information about the ages of their household members to complete it.

- After students have completed the table, review the answers so they can correct their data before performing the graphing activity.

2. Distribute one copy of the worksheet on page 20 to each group and introduce them to this activity.

- Guide students through the steps for creating sections of the circle graph. Make sure students understand how to calculate central angles. If necessary, have a volunteer demonstrate how to use a protractor.

Chalkboard Definitions

circle graph (pie chart): a graph that is used to show the relationship of parts to a whole.

percent: the ratio of a number to 100. Like a fraction, a percent signifies a part of a whole.

Wrapping Up:

- Have students compare their completed tables and circle graphs.

- **What if the number in each age group was doubled? Would its percentage of the total change?** ***(no)*** **Would its angle in the circle graph change?** ***(no)***

- If the class requires additional practice, have them determine how many students have last names that start with A-H, I-Q, or R-Z. Calculate each number as a percentage of the class. Have students create circle graphs to display these percentages.

Extension Activities:

1. Have students visit the library or the U.S. Census Bureau Web site (www.census.gov) to research a table of census information for their city or county. Have them create a circle graph to display percentage data for one statistic.

2. Students can use household population data collected from Lesson 5 or from the Census Bureau Web site to create computer spreadsheets, using graphing features in spreadsheet or database software.

Answers:
Worksheet answers will vary.

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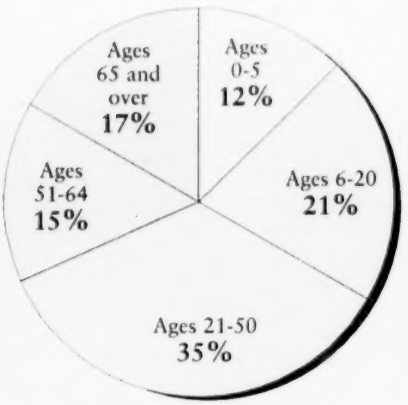
Name: _____

Graph **It!**

Collecting data is a big part of the U.S. Census Bureau's work, but displaying that information in a useful way is also important. The Census Bureau and other data users convert numbers into percents and display those percents in tables and graphs. One graph that shows percents is a **circle graph,** or pie chart. For example, the circle graph at right shows household age-group percents for Mr. Stilwell's 7th Grade Class.

Example: Household Population by Age Group of Mr. Stilwell's 7th Grade Class



CALCULATING PERCENT

Using the information each member in your group wrote down about the ages of members of their household, determine what part of your group's total household population each age group represents. First, add up your group's totals in each age group, then follow these 3 steps:

Step 1: Divide the population for the age group by the total population. (Use a calculator.)
Example: 136 (population for age group) ÷ 1200 (total population) = .11333333333

Step 2: Round the decimal to the hundredth place.
Example: .11333333333 becomes .11

Step 3: Multiply by 100. Add the % sign.
Example: .11 becomes 11%

Now find the percent of the total population for each of your group's age groups.

Group Household Population Table

AGE GROUP	NUMBER	PERCENT
0-5		
6-20		
21-50		
51-64		
65 and over		
Total Population		

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Name: _____

Graph **It!** (continued)

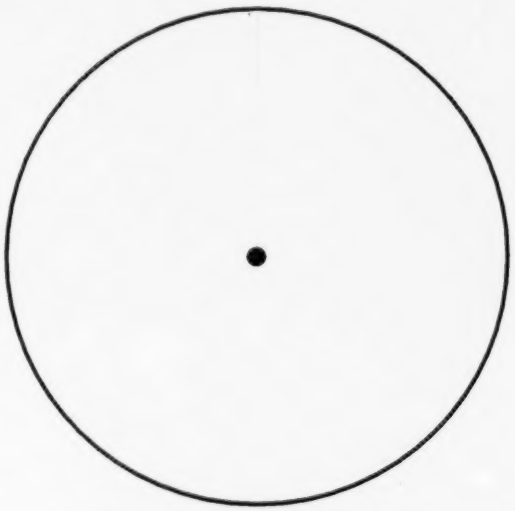
Now you can display the percents you calculated about your group's household ages in a circle graph. Here's how to do it:

1. Begin with the percent for each group. Use your percent figures from page 19 to fill in the percent column in the table below.

2. Calculate the measure of the central angle for each age group. Remember, a circle has 360°.

For example: If the percent for age group 0-5 is 11%, then 11% of 360° = 0.11 x 360° = 39.6°

If you are using a calculator, percent can be calculated by 360° x 11, followed by the % sign.



Population by Age Group Circle Graph

3. Now complete the circle graph for your group. Place your protractor on the graph so that the black dot in the middle of the circle lines up with the 0° indicator on the protractor. For the 0-5 Age Group, use your protractor to indicate the angle measure on the circle graph. For each succeeding group, reorient your protractor so that the endpoint of the last line drawn is now the 0° line. Label each section and your circle graph is complete.

Group Population by Age Group Table

AGE GROUP	PERCENT	ANGLE MEASURE
0-5		
6-20		
21-50		
51-64		
65 and over		

Selected Census 2000 Short Form Questions

1. What is this person's sex?

❑ Male
❑ Female

2. What is this person's age and date of birth? (Print numbers in boxes)

☐☐ Age on April 1, 2000
☐☐ Month of Birth
☐☐ Day of Birth
☐☐☐☐ Year of Birth

Note: Please answer BOTH questions 3 and 4.

3. Is this person Spanish/Hispanic/Latino?

❑ No, not Spanish/Hispanic/Latino
❑ Yes, Mexican, Mexican American, Chicano
❑ Yes, Puerto Rican
❑ Yes, Cuban
❑ Yes, other Spanish/Hispanic/Latino — Print group below ↴

_____

4. What is this person's race? Mark one or more races to indicate what this person considers himself/herself to be.

❑ White
❑ Black, African American, or Negro
❑ American Indian or Alaska Native — Print name of enrolled or principal tribe below ↴

_____

❑ Asian Indian ❑ Japanese
❑ Chinese ❑ Korean
❑ Filipino ❑ Vietnamese
❑ Other Asian — Print race below ↴

_____

❑ Native Hawaiian
❑ Guamanian or Chamorro
❑ Samoan
❑ Other Pacific Islander — Print race below ↴

_____

❑ Some other race — Print race below ↴

_____

View the Census 2000 questionnaire on the U.S. Census Bureau Web site (www.census.gov).

Additional **Resources**

Web sites

U.S. Census Bureau (www.census.gov). The source for information on people, business, and geography. This site offers census news, maps, tools to build your own data tables, and more.

50 States & Capitals (www.50states.com). Visit here for all kinds of official state information, such as state bird, state song, government representatives, and more.

U.S. House of Representatives (www.house.gov). This site offers up-to-date reports of House events and an opportunity to identify and contact House Representatives.

Map Man (www.scholastic.com/jsi/mapman/index.htm). This is an on-line geography contest, hosted by *Junior Scholastic* magazine, featuring a new game each week.

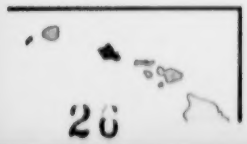
Books

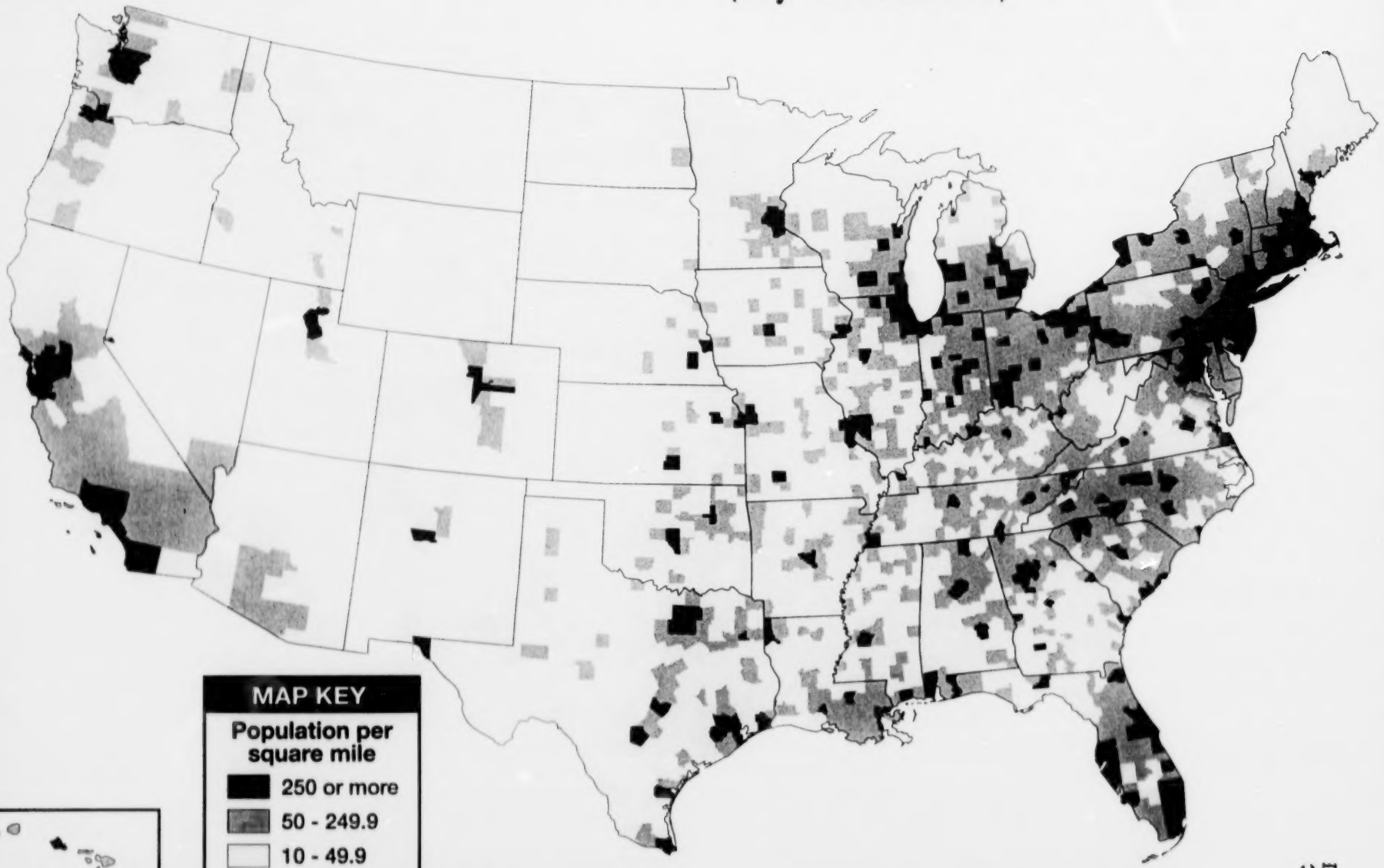
State Governments *by Barbara Silberdick Feinberg* (Watts, 1993). This easy-to-read book explains the division of power between federal and state governments, and gives an overview of what officials, such as governors, legislators, and judges, do.

Take a Stand! *by Daniel Weizmann* (Price/Stern/Sloan, 1996). An upbeat introduction to American government with a bias toward civic participation, this book uses humor and cartoons to make learning about the branches of government, related agencies, and party politics fun.

Statistical Abstract of the United States *by the U.S. Census Bureau* (National Technical Information Service, 1998). If one book can sum us up as a nation, it's this hefty one. Order it by phone (1-800-553-6847) or via the Internet (**www.census.gov/stat_abstract**).

U.S. Population Density
(By Counties)





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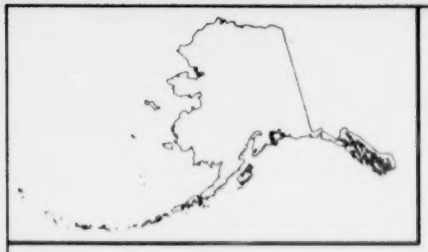
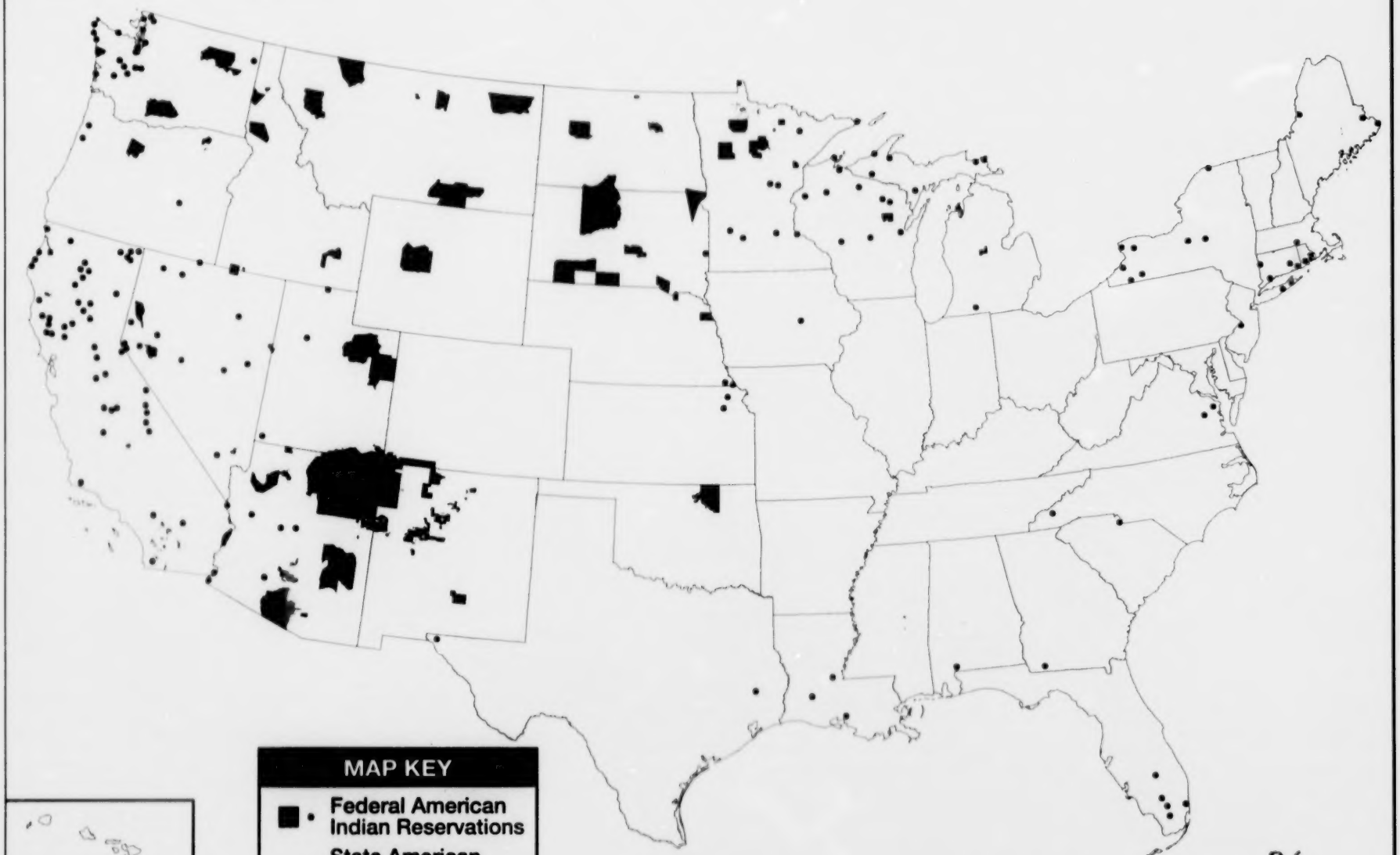
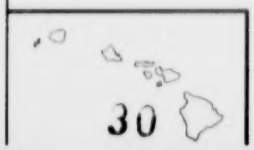
American Indian Reservations







MAP KEY

- Federal American Indian Reservations
- State American Indian Reservations

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